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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,426	12/06/2005	Thomas Johannes Mueller	056226.56029US	4261
23911	7590	09/27/2007	EXAMINER	
CROWELL & MORING LLP			LEE, BENNY T	
INTELLECTUAL PROPERTY GROUP			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/528,426	MUELLER ET AL.
	Examiner Benny Lee	Art Unit 2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 27 July 2007.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1,2,4 and 6-14 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,4,10-14; 6-9 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

The disclosure is objected to because of the following informalities in the substitute specification filed 18 March 2005: Note that the following reference labels need a corresponding description relative to the specification's description of that drawing figure: Fig. 5 "TM", since the description at page 6, line 24 only refers to "Figure 4" rather than "figure 5" as asserted by applicants'. Appropriate correction is required.

Claims 1, 2, 4, 10-14; 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, note that it is unclear what characterizes the recitation "which follows the structure" (i.e. what "structure" is intended to be followed and in what manner is such a structure intended to be followed?). Clarification is needed.

In claim 6, note that it remains unclear how "a structured metallic layer" relates to "at least one metallic strip line" (i.e. the "strip line" is a part of the "structured metallic layer", the "strip line" is separate from "structured metallic layer", etc). Clarification is needed.

In claims 7, 8, 9 note that "the component" lacks strict antecedent basis in claim 6, from which these claims directly depend. It should be noted that claim 6 recites a "surface mounted device".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 10-14; 6-9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Takahashi (of record).

Takahashi (Figs. 6A, 6B) discloses a waveguide filter comprising: a glass substrate (301) having an upper face thereof coated by a coplanar conductive pattern, which includes a microstrip filter pattern (309), a coplanar ground pattern (i.e. characterizing “a structured maetallic layer”) substantially surrounding the microstrip filter pattern (309) and at least one metallic coplanar waveguide strip line portion (i.e. 308) electro-magnetically coupled to the microstrip filter pattern as to provide input/output coupling to the microstrip filter pattern. A “component” (i.e. characterized by silicon substrate 302) includes a cavity (i.e. 303) patterned in the silicon substrate (302) as to define “side walls” [including one sidewall opposite the upper face of substrate (301)] in the silicon substrate (302). A metal ground layer (i.e. 304) is coated on the sidewall surfaces of the silicon substrate (302), including the sidewall opposite the upper surface of substrate (301). Note that the “component” is surface mounted with respect to the glass substrate (301) such as to form a hollow air cavity (i.e. 305) over the microstrip filter pattern (309) and a portion of the coplanar waveguide strip lines (308). In particular, note that the ground plane layer (304) is in electrical contact (i.e. via micro bumps 306) with the surrounding ground plane on glass substrate (301) such that the ground plane on substrate (301) in conjunction with the ground plane layer (304) on the sidewalls of component substrate (302) define the walls of a hollow cavity substantially enclosing the microstrip filter and the coplanar waveguide input/output strip line pattern. Also, note that the hollow cavity (303) of the component further includes a thin circumferential periphery or “web” which provides the portion of ground plane layer (304) in electrical contact with the surrounding ground plane (308) of the

substrate (301). It should be noted that the thin “periphery” of the “web” is a closed structure such that the periphery “follows the structure” (i.e. follows the closed periphery of the cavity within the component 302), as far as such a limitation can be understood. It should be further noted that as known to those of ordinary skill in the art, the resultant enclosed air cavity functions as a cavity structure with specific cross-sectional dimensions resulting in the hollow cavity being resonant at a particular frequency, thereby necessarily affecting the frequency characteristic of the overall filter

Applicant's arguments filed 27 July 2007 have been fully considered but they are not persuasive.

With respect to the rejection of claim 6 as being indefinite, contrary to applicants' assertions, the claimed recitation does not clearly provide a distinction as to whether the “metallic strip line” is a structure distinct from and thus distinguished from the earlier recitation of a “structured metallic layer” or can be construed as being a part of the general recitation of the “structured metallic layer” (i.e. the strip line is included as a part of the structured metallic layer).

With respect to the prior art rejection, applicants' have asserted that amended claim 1 now includes the limitations of claims 3 & 5, now cancelled and asserts that Takahashi et al does not disclose a “web which rests on the structured metallic layer”. Moreover, applicants' contend that Takahashi et al relies on “a plurality of Au microbumps 306 formed on the flat face around cavity 303” to establish the electrical connection therebetween. Therefore, applicants' conclude that such “microbumps” cannot constitute a “circumferential web”. It has been further asserted by applicants' that by providing the “web” structure, an optimal joining arrangement would have been provided, since the joining can be “distributed in the spaces” when joining takes place, as

contrasted with “gaps” between the substrate and component, when the microbump connections are used in Takahashi et al.

In response, the examiner has considered applicants’ arguments, but have found them unpersuasive for the following reasons: First, with respect to applicants’ assertion that Takahashi et al lacks a “web which rests on the structured metallic layer”, such an assertion is clearly not true. As pointed out in the above rejection of record, the examiner has clearly indicated that the “component” (i.e. 302) includes “a thin circumferential periphery”, which the examiner has corresponded to the claimed “circumferential web” (i.e. a thin layer of material is nominally characterized as a “web”), and which provides “the portion of the ground plane (304) in electrical contact with the surrounding ground plane of the substrate (301)”. That is to say, the thin peripheral “circumferential web” of “component” (i.e. substrate 302) does indeed and must necessarily “rest on” the metallic layer or the ground plane of the substrate (301) to provide the electrical contact between respective ground plane layers, which define cavity (303). Secondly, as for applicants’ assertion that Takahashi et al uses conductive microbumps to effect the connection or joining of the component to the metallic layer, while such may be true, it should be noted that the “circumferential web” (as defined in the above rejection) would have none the less been “resting on” and thus in electrical contact with the metallic layer. It should be further noted that at least independent claim 1 merely calls for the “circumferential web” to “rest on” the “structured metallic layer”, which is clearly shown in the examiners interpretation of Takahashi et al. Furthermore, in Takahashi et al, since the component provides electrical contact around it’s periphery (i.e. via ground plane layer 304), when it is in contact with the ground plane layer of substrate (301), then such a configuration has been interpreted by the examiner as a feature

which “follows the structure” (i.e. as far as such a limitation can be understood). Additionally, it should be noted that in view of what is actually recited in claim 1, whether microbumps are present (or not) in Takahashi et al does not appear germane to the rejection made, especially since it has been established by the examiner that the component has a “circumferential web” which “rests on” the “structured metallic layer” and which “follows the structure”, as set forth in the above rejection. Thirdly, with respect to purported advantages of applicants’ invention with regard to the joining between the component and the structured metallic layer being “distributed in the space” therebetween, as contrasted to the disadvantage of joining having “gaps” as in Takahashi et al (i.e. due to the presence of microbumps), such an argument is not commensurate with what is actually claimed (e.g. in claim 1). That is to say, the purported advantage does not appear to be actually recited or readily inferred from claim 1 as currently presented, and as such any arguments relative to such purported advantage is not commensurate with or germane to what is actually recited in claim 1. Accordingly, for reasons set forth above, the rejection of record has been sustained.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

B. Lee



BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817